PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION CONCERNING THE FILING OF AMENDMENTS OF THE CLAIMS

(PCT Administrative Instructions, Section 417)

To:

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04.11.01

Date of mailing (day/month/year) 20 October 2004 (20.10.2004)	
Applicant's or agent's file reference CFL00345WO	**IMPORTANT NOTIFICATION**
International application No. PCT/JP2004/004071	**International filing date** (day/month/year) 24 March 2004 (24.03.2004)
Applicant CANON KABUSHIKI KAISHA et al	

1. The applicant is hereby notified that amendments to the claims under Article 19 were received by the International Bureau on:

   14 September 2004 (14.09.2004)

2. This date is within the time limit under Rule 46.1.

   Consequently, the international publication of the international application will contain the amended claims according to Rule 48.2(f), (h) and (i).

3. The applicant is reminded that the international application (description, claims and drawings) may be amended during the international preliminary examination under Chapter II, according to Article 34, and in any case, before each of the designated Offices, according to Article 28 and Rule 52, or before each of the elected Offices, according to Article 41 and Rule 78.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

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Date: September 14, 2004

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Amendment of the claims under Article 19(1) (Rule 46)

International Application No.: PCT/JP2004/004071
International Filing Date: 24.03.2004
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Applicant's or Agent's File Reference : CFL00345WO

Dear Sir

The Applicant, who received the International Search Report relating to the above identified International Application transmitted on July 20, 2004, hereby files amendment under Article 19(1) as in the attached sheets.

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The Applicant hereby amends claims 1, 10 and 15 and cancel claim 2, and retains claims 3 to 9, 11 to 14 and 16 to 19 unchanged.

Very truly yours,

O K A B E
International Patent Office

TAKANASHI, Norimichi

Attachment:
(1) Amendment under Article 19(1) 1 sheet

CLAIMS

1. (Amended) An electrode material for a lithium secondary battery, comprising particles of a solid state alloy having silicon as a main component, wherein the particles of the solid state alloy have a microcrystal or amorphous material comprising an element other than silicon, dispersed in microcrystalline silicon or amorphized silicon, and wherein the solid state alloy contains a pure metal or a solid solution.

2. (Cancelled)

3. The electrode material for a lithium secondary battery according to claim 1, wherein the alloy has an element composition in which the alloy is completely mixed in a melted liquid state.

4. The electrode material for a lithium secondary battery according to claim 1, wherein the alloy is composed of silicon and at least a first element A having a lower atomic ratio than silicon, and wherein the first element A is at least one element selected from the group consisting of tin, indium, gallium, copper, aluminum, silver, zinc and titanium.

5. The electrode material for a lithium secondary battery according to claim 1, wherein the

the second element E being at least one element selected from the group consisting of copper, silver, zinc, titanium, aluminum, vanadium, yttrium, zirconium and boron;

(c) a eutectic of the first element A and the second element E, the first element and the second element being different from each other;

(d) a eutectic of any combination of (a), (b), and (c).

9. The electrode material for a lithium secondary battery according to claim 1, wherein the silicon in the alloy is doped with at least one element selected from the group consisting of boron, aluminum, gallium, antimony and phosphorous at a dopant amount of an atomic ratio in a range of 1×10^{-8} to 2×10^{-1} with respect to the silicon.

10. (Amended) An electrode material for a lithium secondary battery, comprising silicon particles having silicon as a main component, wherein the silicon is doped with at least one element selected from the group consisting of boron, aluminum, gallium, antimony and phosphorous at a dopant amount of an atomic ratio in a range of 1×10^{-8} to 2×10^{-1} with respect to the silicon, and wherein the particles having silicon as a main component are complexed with at least a material selected from the group consisting of a carbonaceous material and metal

magnesium.

11. The electrode material for a lithium secondary battery according to claim 9 or 10, wherein the dopant has an atomic ratio in a range of 1×10^{-5}

to 1×10^{-1} with respect to the silicon.

12. The electrode material for a lithium secondary battery according to claim 9 or 10, wherein the dopant is boron.

13. The electrode material for a lithium secondary battery according to claim 1 or 10, wherein the particles of the alloy having silicon as a main component or the particles having silicon as a main component have an average particle diameter of 0.02 μm to 5 μm.

14. The electrode material for a lithium secondary battery according to claim 1 or 10, wherein the particles of the alloy having silicon as a main component or the particles having silicon as a main component has a form of fine powder.

15. (Amended) The electrode material for a lithium secondary battery according to claim 1, wherein the particles of the alloy having silicon as a main component are complexed with at least a material selected from the group consisting of a carbonaceous material and metal magnesium.

16. An electrode structure comprising an electrode material according to claim 1 or 10, a conductive auxiliary material, a binder and a current collector.

17. The electrode structure according to claim